

CASE STUDY

PROJECTION SCREENS

TECVISION® AND THE IMMERSIVE CAVE EXPERIENCE



Product: Edgeless Clarion and TecVision XT1000X screen surface.

- Custom Edgeless Clarion screen design using a TecVision® surface helps make a virtual environment a reality and a client totally immersed.

VIRTUAL REALITY ENVIRONMENTS

The intersection of AV, virtual reality, 3D, and Computer Aided Virtual Environments (CAVE) allows companies to take clients inside a design concept and have a look around. This tool offers limitless possibilities for such diverse applications as automotive simulation, real estate sales, and architectural, engineering, and construction programs. Scalable Display Technologies saw the potential of this attractive technology and took advantage of it with some help from Draper.

Scalable develops advanced display solutions, including automatic image software for aligning and blending multiple projectors into one large display. This type of solution is an essential part of successful multi-projector virtual reality presentations.

To promote this use of virtual reality, Scalable has built a pair of CAVE environments. The CAVE spaces allow clients to experience Scalable's products by immersing them in a 3-D virtual reality experience that could never be achieved with a single flat projection surface.

"As market interest grew, it became clear that having a corner CAVE and a three-sided CAVE would be very beneficial," said Rick Posch, president & CEO of Scalable Display Technologies Inc. "We responded by building one of each."

"Our design goal was to repurpose an existing 12' X 12' room into a CAVE without modifying the wall structure," Posch said of the three-sided CAVE. "The immersive aspect of the screen is critical to the success of the overall experience. Draper proposed a screen design that met our design objective."

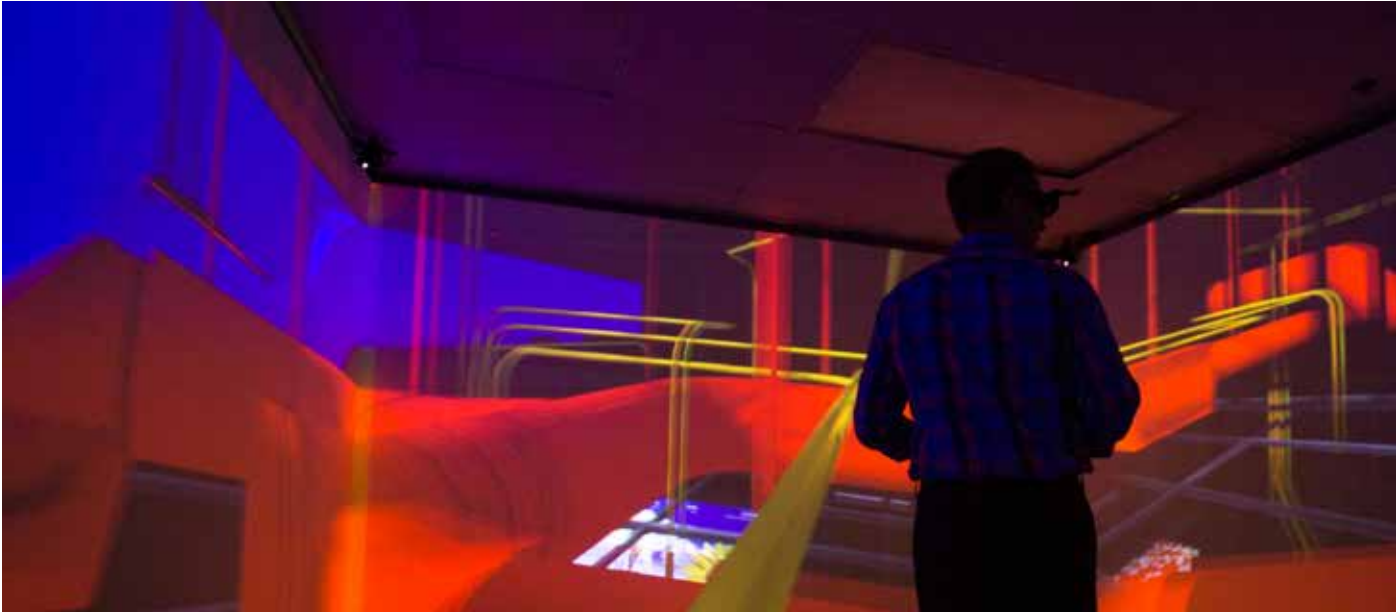
For the framing system, Draper suggested the Edgeless Clarion. The viewing surface wraps around the perimeter frame and attaches to the back side, so the screen is solid white—and perfectly flat—with no visible frame or border. Draper's precise manufacturing ensured the frame edges join seamlessly together, allowing Scalable to blend content onto all three walls at once.

"The space has a low ceiling, and Scalable wanted the screens to start no more than 6" from the door," said Steve Cook, Draper's national AV consultant manager. "They wanted to cover as much of the room as possible. The screens also had to fit tightly together. We were able to use a custom clamp design from another project to bring the screen edges together."

Another issue with putting together a CAVE like this is the amount of light being sent around the room.

continued on next page

CASE STUDY: TECVISION AND THE IMMERSIVE CAVE EXPERIENCE



“There is a lot of light in a situation like this, so a grey surface would have been nice,” Cook said. “But there were concerns about brightness and also hot spotting from the ultra-short throw projectors, so we decided on TecVision XT1000X White as a good compromise.”

Draper’s recommendation paid off. Kevin Amaratunga, Scalable’s VP of engineering was pleased with the results, and the screens continue to perform well.

“We selected this material because of its uniformity, smooth surface, and wide viewing angles,” he said. “Those three traits are very important for ultra-short throw projection. We don’t see any hotspotting or uniformity issues with the image quality.”

The CAVE uses 3300 lumen laser projectors to deliver content at 1080p, or in “active stereo” mode at 720p. Users may or may not wear 3D glasses with head tracking sensors, depending on the content. Scalable has visitors view first from the center of the room, which is the perfect viewing location. Whatever the content, the reaction is always the same.

“The first impression in the CAVE is amazement,” Amaratunga said. “Most visitors have not had the opportunity to experience a display like this before. Our

software adds perspective correction to the content, which makes the environment feel that much more immersive.”

The three-sided CAVE is just one of many systems used by Scalable for research and demonstration. Scalable also blends projectors on Draper’s TecVision XH700 Grey surface, ideal for marketing, signage, and training.

Contact Draper today to find out how we can help you develop your own immersive projection experience.

To learn more about Draper’s Edgeless Clarion, go to: draperinc.com/go/EdgelessClarion.htm.



To learn more about Draper’s award-winning 8K ready, ISF certified TecVision screen surfaces, go to: draperinc.com/go/TecVision.htm.

For more information on Scalable, visit: scalable.com.

draperinc.com/go/whitepapers_casestudies.htm